

# Mocana TrustEdge™

## A Comprehensive, Trusted Platform for Device Security

Mocana® TrustEdge™ provides a comprehensive endpoint platform for mission-critical IoT device security, designed for IoT endpoints, embedded systems, industrial automation and control systems, gateways, and server-class critical infrastructure. Mocana TrustEdge incorporates device identification based on an immutable identity and optional security module plugins for a plurality of hardware-based root of trust anchors (e.g., TPM, Intel EPID, SIM, MCU). Advanced identity attestation for proof of possession of a secret associated with the identity is supported based on an endorsement or attestation certificate of the underlying secure element. The device authentication methods support devices in a multi-tenant architecture for scalability, elasticity, and optimized resource utilization. Mocana TrustEdge is distributed as pre-compiled binaries for the supported platforms and secure elements and are comprised of the Mocana TrustEdge Protection Enrollment Client (TPEC) and Mocana TrustEdge Protection Update Client (TPUC).

TPEC provides lifecycle management from device identification, device authentication for onboarding, to provisioning for native or containerized applications and services on IoT endpoints and edge gateways. TPEC provides a comprehensive set of Enrollment over Secure Transport (EST) commands, authentication methods, and leverages the Mocana TrustCenter™ Enrollment Service (TCES) as a protocol translation layer between the EST protocol and REST API connectors to enterprise and commercial certificate authorities (CA) for certificate lifecycle management. TCES helps overcome both the costs and complexities associated with traditional PKI.

TPUC provides tamper-resistant device lifecycle management for supply chain provenance, from device identification and attribution, device authentication and authorization, to policy and device attribute-based updates of firmware, software, and configuration on IoT endpoints and edge gateways. TPUC leverages the Mocana TrustCenter Update Service (TCUS) for policy and device attribute-based update rules. The update package creation and distribution workflows are based on a plurality of qualified providers (software suppliers) and upstream publishers (i.e., device owners). The device authentication methods support devices in a single or multitenancy managed by downstream publishers (i.e., device operators). Mocana TrustEdge additionally includes secure session management, certification chain verification, and support for containers and virtual machines.

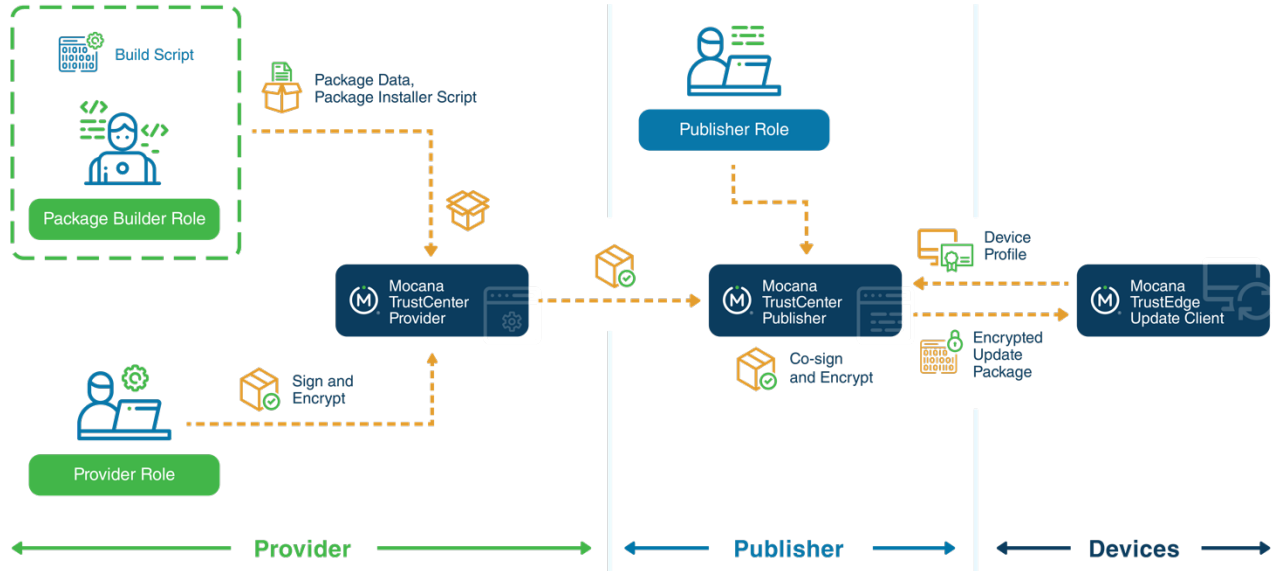
### Security Features

- › Integration with Mocana TrustCenter services
- › Integration with H/W, F/W or S/W based root of trust for trusted identity
- › Certificate-based device authentication and policy-based authorization
- › Mutual authentication for trustworthiness
- › State synchronization with Mocana TrustCenter services
- › Use of package scripts and executables to install update packages
- › Online or portable media mode of secure update package distribution
- › Leverages the FIPS 140-2 Level 1 certified NanoCrypto™ libraries

## Device Types

- › Edge gateways
- › Network devices
- › Network servers
- › HMI workstations
- › Medical devices
- › Aviation systems
- › Automotive systems
- › Industrial control systems
- › Hand-held and mobile devices
- › Smart meters
- › Lighting controllers
- › Consumer appliances

## Mocana TrustCenter and TrustEdge System Architecture



## Benefits

- › Enables IoT services for devices across verticals
- › Zero touch device provisioning at power-on in field
- › Authoritative and immutable identity endorsement from a Root of Trust
- › Local key generation and secure key storage
- › Apply tamper-proof updates after supply chain validation
- › Apply firmware, system, configuration or application updates
- › Guaranteed GPL-free code protects your intellectual property

## About Mocana

Mocana protects more than 100 million devices worldwide and is trusted by the largest aerospace, industrial, energy, healthcare, and communications companies. Find out more at [www.mocana.com](http://www.mocana.com).

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